ABSTRACT

A variety of improved thermal mapping catheters are disclosed which are capable of sensing and mapping thermal variations within body vessels. In embodiments directed at vascular applications, the catheters are capable of detecting temperature variations in atherosclerotic plaque, on the atherosclerotic plaque surface, and on the arterial wall of aneurysms and other vascular lesions of the human vasculature. In one aspect of the invention, a combined thermal mapping and drug delivery catheter is provided. In this embodiment a plurality of thermal sensors are combined with at least one infusion port suitable for delivering therapeutic agents into a vessel. In some embodiments, at least some of the infusion ports are located between adjacent thermal sensors. The described catheters may be used in a variety of new applications and medical diagnostic and treatment techniques.